6-30-97

FACT SHEET

GREAT WATERS SECOND REPORT TO CONGRESS

TODAY'S ACTION

- The U.S. Environmental Protection Agency (EPA) is issuing the second in a series of Reports to Congress entitled *Deposition of Air Pollutants to the Great Waters*. The "Great Waters" include: the Great Lakes, Lake Champlain, Chesapeake Bay, and many U.S. coastal estuaries.

- The purpose of this report is to provide an update on what is known about atmospheric deposition of pollutants to the "Great Waters" based on the scientific data available since publication of the First Report to Congress in May 1994. The report discusses atmospheric deposition and its contribution to pollution in the Great Waters, the effects and sources of such pollution, and whether changes to existing law are necessary.

- EPA is also issuing a notice for public comment on the results of its evaluation of the authorities of section 112 of the Clean Air Act to prevent adverse public health and environmental effects associated with atmospheric deposition of hazardous air pollutants. EPA's preliminary determination is that the authorities of this section are adequate. Additionally, since EPA believes the authorities of section 112 are adequate, EPA's preliminary determination is that further emission standards (under the Great Waters program) beyond those otherwise authorized under section 112 are not necessary or appropriate. EPA will issue final determinations in March 1998 after reviewing comments on the draft determinations.

- It is important to note that although EPA's preliminary determination is that the authorities of section 112 of the Clean Air Act are adequate to protect public health and the environment from atmospheric deposition of hazardous air pollutants, many of the provisions in this section have not yet been fully implemented. EPA recognizes that there is more work to be done to further reduce emissions of hazardous air pollutants. In its preliminary assessment EPA has concluded that this work can be accomplished under the existing authorities of section 112. EPA believes that further legislative or regulatory power would therefore be unnecessary.

KEY FINDINGS

- This report confirms and provides added support for the findings of the First Report to Congress, which concluded that persistent and bioaccumulative toxic pollutants, and excessive nitrogen, can adversely affect the environmental conditions of the studied Great Waters. These pollutants can contribute to adverse ecological and human health impacts.

Moreover, the deposition of pollutants from the atmosphere can significantly impact waterbodies.

- Quantitative monitoring studies have demonstrated that atmospheric deposition contributes to pollution in the Great Waters. Studies also show encouraging evidence that significant declines in concentrations of persistent toxic pollutants occurred during the 1970s and 1980s. This is due to many efforts to reduce uses and discharges of potentially harmful chemicals.

- Considerable research has focused on deposition of nitrogen compounds to coastal estuaries. Atmospheric deposition is believed to be responsible for approximately 27 percent of the annual nitrogen concentrations in the Chesapeake Bay, while point source water discharges are estimated to contribute 23 percent, and non-point sources such as fertilizers and animal wastes contribute approximately 50 percent.

BACKGROUND

- Hazardous air pollutants, also known as air toxics, are pollutants that are known or suspected to cause cancer or other adverse human health effects (such as birth defects or reproductive effects) or adverse effects to the environment. Section 112 of the Clean Air Act requires EPA to control emissions of these hazardous air pollutants.

- The Clean Air Act requires EPA to assess the impacts of atmospheric deposition of hazardous air pollutants (and any other air pollutants EPA chooses to include) on the Great Waters.

- Atmospheric deposition occurs when pollutants precipitate (in the form of rain or snow for example) out of the air and settle on the land or in waterbodies. Over time, the concentrations of the persistent pollutants can accumulate and can adversely affect ecosystems.

- The current list of 15 Great Waters pollutants of concern, which includes several hazardous air pollutants and a few other pollutants, has not been expanded since the first report. The list consists generally of chemicals which have a tendency to persist in the environment, to accumulate in the tissues of plants and animals, and to biomagnify through the food web. In biomagnification, the concentrations in tissues increases as one moves from algae or sediments to shellfish to fish higher in the food chain to fish-eating birds and mammals.

- The pollutants of concern are: metals (mercury, cadmium, lead) and their compounds, dioxins (2,3,7,8-TCDD), furans (2,3,7,8-TCDF), polycyclic organic matter (POM), polychlorinated biphenyls (PCBs), and pesticides (chlordane, DDT/DDE, dieldrin, hexachlorobenzene, alpha-hexachlorocyclohexane (α-HCH), lindane, and toxaphene), and

nitrogen compounds.

- One indicator of potential human exposure to bioaccumulative pollutants is the presence of fish consumption advisories issued by state agencies. According to EPA's 1995 fish consumption advisory database, current advisories in the Great Lakes states are most commonly issued for PCBs, followed by mercury and dioxins, while in coastal waters, advisories are commonly issued for PCBs, followed by dioxins.

- In estuaries and coastal waters, inputs of nitrogen compounds can result in excessive algal growth, known as eutrophication. Overproduction of algae can contribute in time to reduced oxygen levels in the water, which can harm fish or shellfish. Excess algae can also decrease light available to submerged aquatic vegetation, or to corals. EPA's Chesapeake Bay Program has identified eutrophication as a major problem affecting the overall health of the Bay system. Atmospheric deposition of nitrogen compounds to estuaries and their watersheds can often be a significant portion of total nitrogen concentrations in these waterbodies.

WHAT TYPE OF INFORMATION IS CONTAINED IN THE SECOND REPORT?

- The second report provides:

  - information on the extent of contamination by the pollutants of concern in the Great Waters, including recent data on exceedances of water quality criteria;

  - updated information on impacts on animal and plant life in the Great Waters as well as ecological and potential human health effects associated with exposure to the pollutants of concern;

  - a discussion of some of the major atmospheric monitoring and modeling efforts that are contributing to an understanding of the effects atmospheric deposition to the Great Waters;

  - a summary of several federal, state, and local agency activities which are taking place to protect the four major waterbody groups of the Great Waters (Great Lakes, Lake Champlain, Chesapeake Bay, and other U.S. coastal waters); and

  - conclusions and recommendations for future actions related to atmospheric deposition of pollutants of concern to the Great Waters.

WHAT IS EPA DOING TO CLASSIFY AND STUDY THE SOURCES OF THE GREAT WATERS TOXIC AIR POLLUTANTS OF CONCERN?

- Through federal and state efforts, EPA has made substantial progress in recent years in

classifying many industry groups (known as source categories) which release toxic pollutants to the air. EPA recently completed a national inventory, or listing, of emissions for seven air toxics which are also Great Waters pollutants of concern. In addition, the eight Great Lakes states and the Canadian Province of Ontario are compiling the Great Lakes Emissions Inventory on emission sources of 49 toxic air pollutants.

- EPA has developed or is currently developing emission standards for over 170 categories of stationary (i.e. factories and power plants) emission sources. As these standards are implemented, EPA expects emissions of many of the Great Waters pollutants of concern to decrease significantly.

- EPA has also made progress in investigating emission sources of nitrogen compounds. In recent modeling studies, EPA and the National Oceanic and Atmospheric Administration (NOAA), have investigated both local and distant sources of nitrogen oxides which are deposited into Chesapeake Bay and its watershed. These models, along with emissions data, have identified electric utilities and mobile sources (motor vehicles) as major contributors of nitrogen oxides to the Bay.

WHAT ARE SOME OF THE FUTURE DIRECTIONS FOR EPA'S GREAT WATERS PROGRAM?

- In the 1990s, the limited available information in the Great Lakes basin seems to indicate a gradual decline or possible leveling-off of concentrations of several of the pollutants of concern. EPA will need to continue to monitor these concentrations in order to better understand and describe the current trends of these persistent chemicals in the water, sediments, and tissues of fish and other living resources.

- EPA has identified areas of the program where information is limited and has developed some specific directions that will help advance our understanding of relevant issues. These directions include the need to:

    - increase focus on the identification of emissions sources utilizing EPA's national emissions inventory and the inventory developed by the Great Lakes states;

    - continue to develop and implement appropriate process changes or control strategies under section 112 and other Clean Air Act provisions to reduce releases of pollutants of concern;

    - expand modeling efforts to estimate more precisely the role of atmospheric deposition as it affects the concentrations of persistent pollutants in Great Waters while actions to reduce toxic emissions take effect;

    - improve modeling efforts (for nitrates and other nitrogen compounds) that link air

pollutant transport and deposition models to watershed and estuary models to better understand overall ecosystem effects;

- continue to promote pollution prevention and other multimedia (i.e. air and water) reduction efforts in and around the Great Waters; and

- assess the economic impacts of pollution to the Great Waters.

WHAT ADDITIONAL ACTIONS IS EPA ISSUING WITH THE REPORT?

- EPA is also issuing, for public comment, a draft determination about the adequacy of the authorities of section 112 of the Clean Air Act to prevent adverse effects to public health and the environment associated with atmospheric deposition of hazardous air pollutants to the Great Waters. Based on the analysis of the broad scope of the section 112 provisions, EPA believes its authorities are adequate to prevent these effects.

- EPA is also issuing a draft determination that no further Great Waters program controls beyond those otherwise authorized by section 112 are believed to be necessary or appropriate. EPA will publish these draft determinations in a notice in the Federal Register and solicit public comment during July 1997; EPA will make final determinations by March 15, 1998.

FOR FURTHER INFORMATION

- This report will be available through EPA's Air and Radiation Docket and Information Center (Docket Number A-97-21). The docket can be reached via telephone at (202) 260-7548 or via facsimile at (202) 260-4000. A reasonable fee may be charged for copying. For technical questions on the report, please contact John Ackermann of EPA's Office of Air Quality Planning and Standards at (919) 541-5687.

- Anyone with a computer and a modem can download the Federal Register Notice from the Clean Air Act Amendments bulletin board (under "Recently Signed Rules") on EPA's Technology Transfer Network (TTN) by calling (919) 541-5742. For further information about how to access the bulletin board, call (919) 541-5384. You can also access the TTN directly through the World Wide Web at: (http://ttnwww.rtpnc.epa.gov/).

- EPA's Office of Air and Radiation's home page on the Internet contains a wide range of information on the air pollution programs including air toxics issues. The Office of Air and Radiation's home page address is: (http://www.epa.gov/oar/).